The OHIO STATE UNIVERSITY BULLETIN

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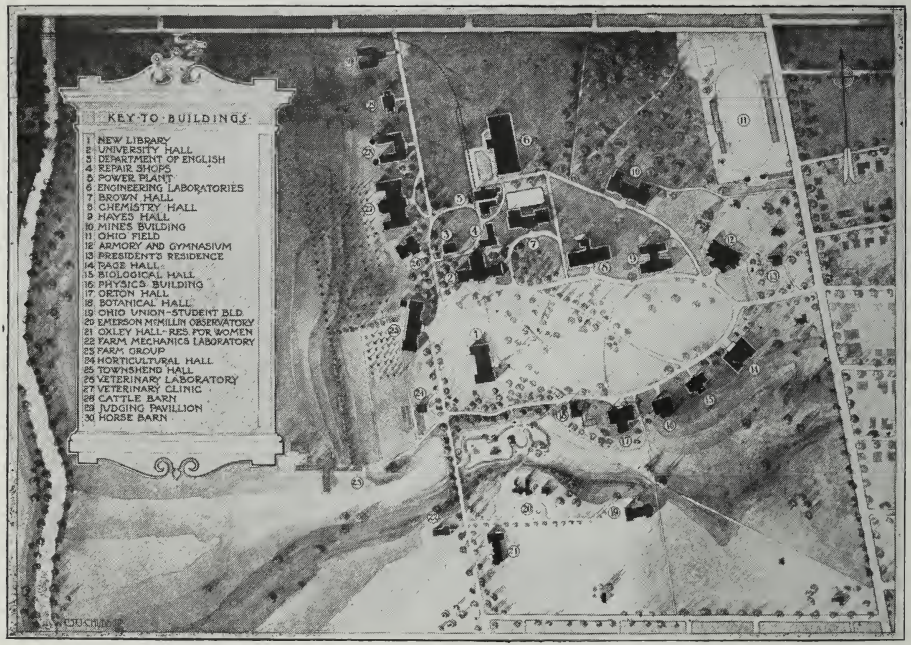
NUMBER · FORTY · ONE

ILLUSTRATING SOME OF THE FACILITIES FOR INSTRUCTION IN THE COLLEGE OF ENGINEERING

COLUMBUS · JUNE 1912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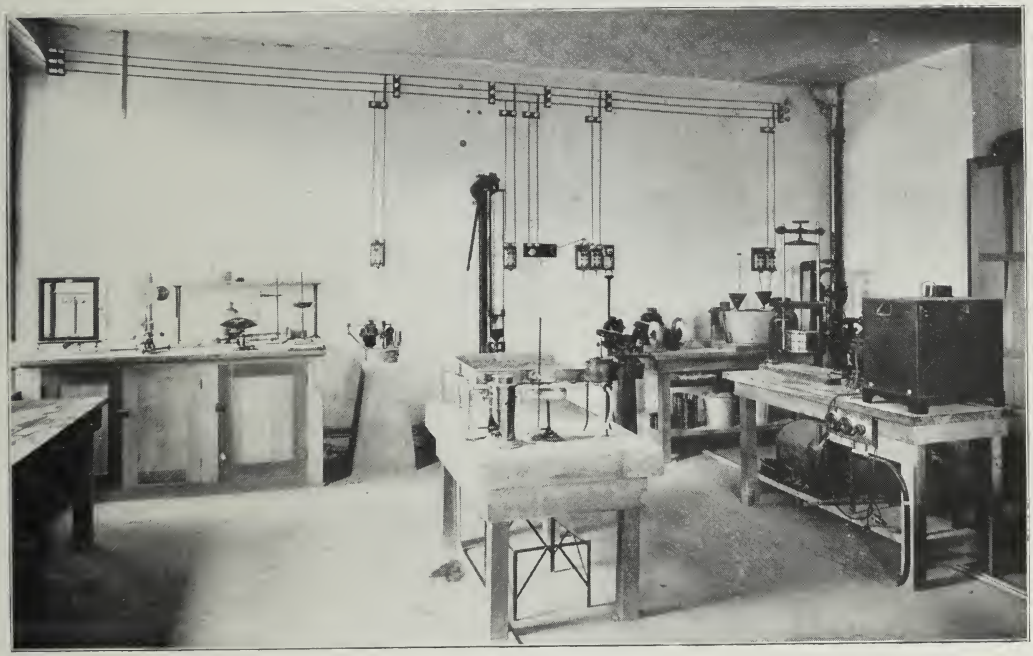
THE CAMPUS

UNIVERSITY HALL

This is the oldest building for scholastic purposes occupied by the University. It was built in 1873, and has been extended since. Its present value is $138,000. In this building, the administration offices and auditorium are located. Engineering students go to this building for their mathematics, language and cultural subjects.

BROWN HALL

This building was built in 1902 at a cost of $75,000. It accommodates the Departments of Civil Engineering, Architecture, and Engineering Drawing. The laboratory of the State Highway Commission is also located here.



HIGHWAY LABORATORY

In this laboratory, samples of road materials from all parts of Ohio are studied and tested. In an adjoining shed, rattlers for brick testing are also installed. This work is done in co-operation with the State Highway Commission.

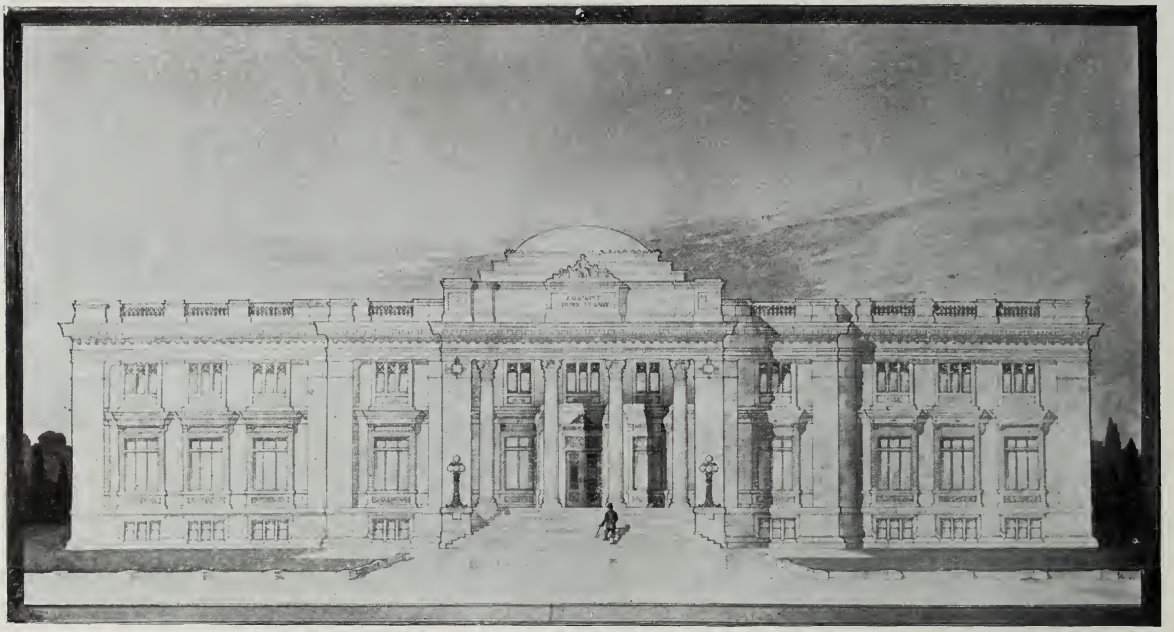
Camp at the Lewiston Reservoir for Summer work in Civil Engineering.

THE DINNER HOUR

Summer instruction camps are held every year. The work done is an actual survey, the results of which are to be used in some public or private enterprise. The same site is not occupied twice.

CEMENT TESTING AND CONCRETE LABORATORY

The equipment in this department is thoroughly practical. Cement work has become so important to engineering in general, that the course is sought by students from all engineering departments. The views show the mode of determining the breaking load of a reinforced concrete beam 12 inches square by 16 feet long.



DESIGN OF A PUBLIC LIBRARY

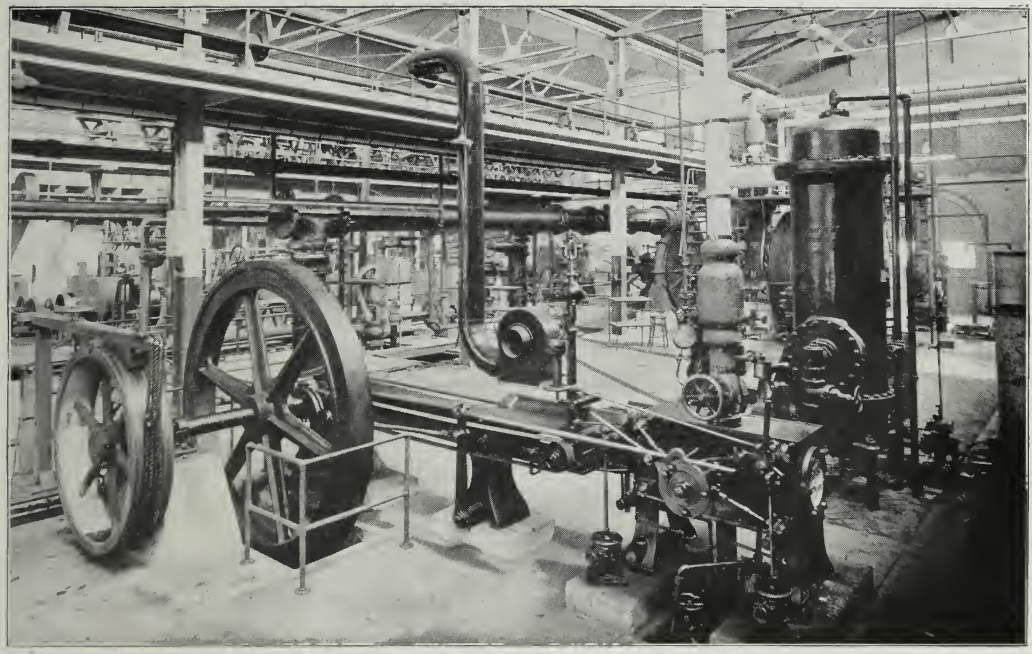
The above drawing illustrates the quality and kind of work done by and required of students in the course in Architecture. Each student's work is necessarily individual, and each has different problems, so that in every case the training from the very beginning is toward self-expression.

CLASS IN PHOTOGRAPHY

This work is given in connection with the course in Architecture. The Laboratory is without doubt the best equipped and most extensive in the country for the teaching of this subject. The physics and chemistry of photography constitute the foundation of the course and the practical drill in correct exposure and development, copying, lanternslide work, and many other branches are thoroughly given.

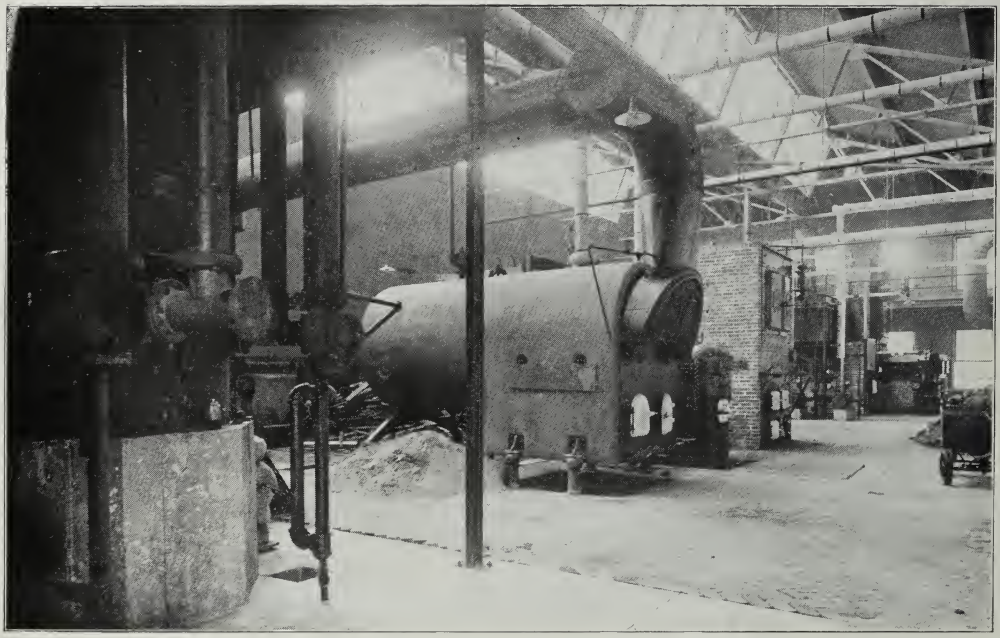
ROBINSON LABORATORY

This building contains the laboratories of the Departments of Mechanical and Electrical Engineering. The recitation rooms, drawing rooms, library and offices of these departments are temporarily accommodated there also, but the completed plan provides a new building parallel and closely adjoining the present structure, connected to it by covered passage ways or bridges. The present structure was built in 1907 and cost $75,000.



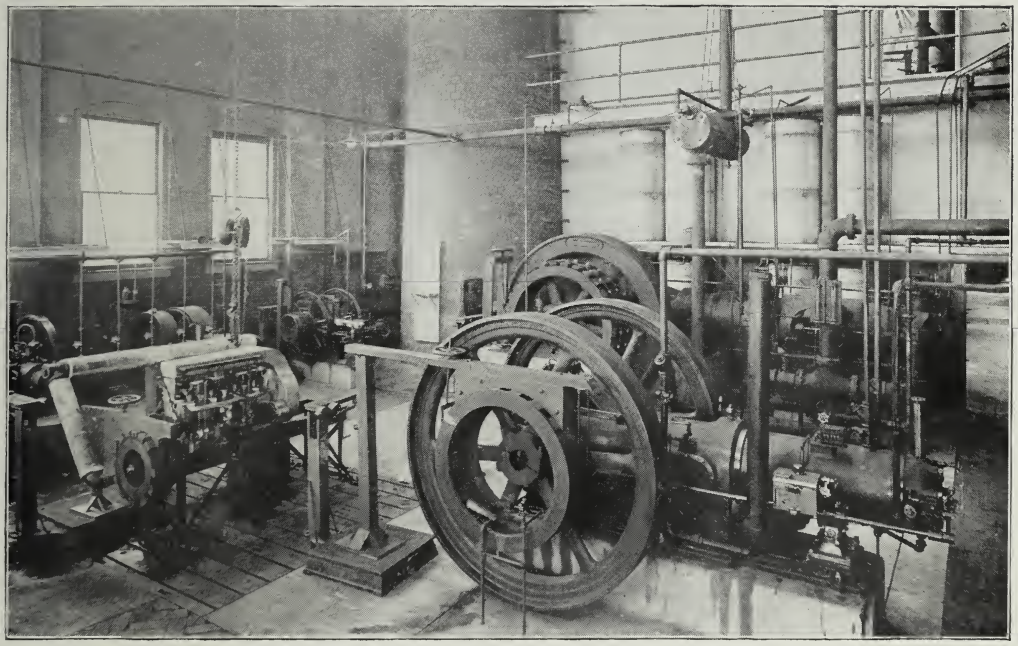
VIEW IN STEAM ENGINE LABORATORY

A part of the equipment in Steam Engineering is shown. Beside the two large units, there are 10 or 12 other steam engines equipped for testing purposes. These include simple and compound slide valve types, Corliss type, turbine type, etc. A portion of the hydraulic bay is seen in the distance. It is excellently equipped with pumps, water motors, weirs, etc.



VIEW IN STEAM BOILER LABORATORY

The equipment shown here is for testing and experimental purposes only, and is separate entirely from the Boiler House which furnishes power and heat for the University. Complete heat balances are made on boilers of five different types, and the facilities for experimental research in this field are among the best in the country.



GAS ENGINE LABORATORY

This equipment includes a new 75 H. P. Smith suction gas producer (located just beyond the partition) a two cylinder, tandem, four-cycle, horizontal gas engine of 80 H. P., arranged to use either producer gas or natural gas, a two-cycle gas engine of 25 H. P., and some 6 other engines of from 2 to 20 H. P. Automobile and marine engines are also available for test.

AN ELECTRICAL ENGINEERING LABORATORY

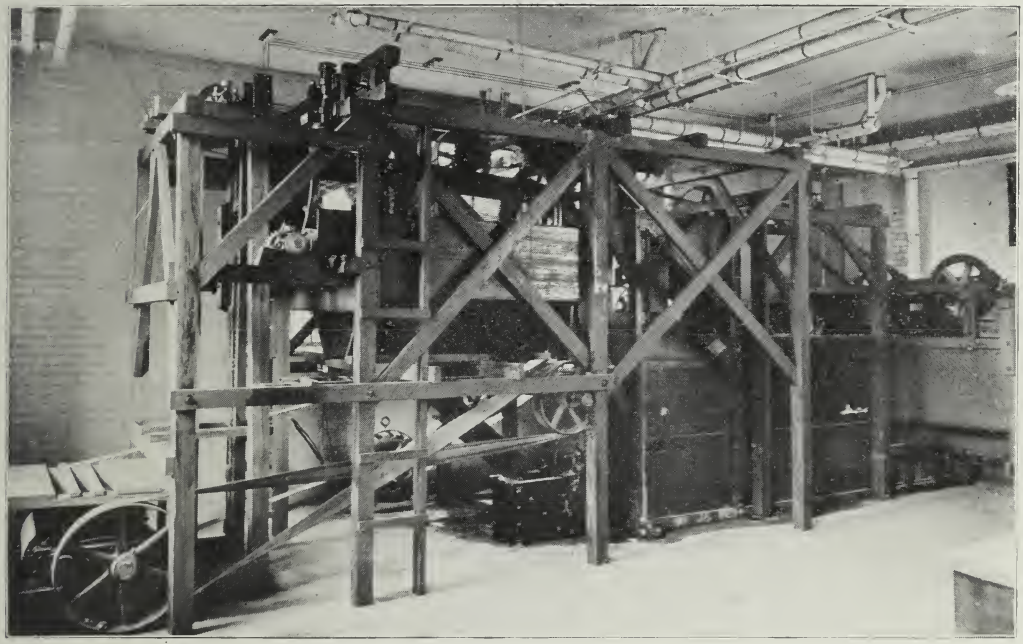
This department is especially well equipped. The above illustration shows part of the apparatus of the alternating current laboratory. For this and the direct current laboratory, there is an equipment of seventy-five generators and motors aggregating 800 H. P. capacity. There are fifteen other rooms containing apparatus illustrative of every phase of electrical work.

LORD HALL

This building was erected in 1905 for the use of the Departments of Mineralogy and Metallurgy, Mine Engineering and Ceramic Engineering. Collectively these departments constitute the School of Mines and discuss the entire field of the mineral industry. The department of Mechanics is temporarily accomodated in this building also. The cost of the building was $85,000.

MINE RESCUE APPARATUS

Students are required to learn to wear and perform bodily labor, while wearing the oxygen helmets. They are shut into rooms filled with sulphuric acid gas, in which suffocation would at once ensue without the protection of the helmet. Testing firedamp and explosive gases and the use of the safety lamp is also a part of the work given.



COAL WASHING PLANT

This equipment is used in the course in Ore Dressing, given by the Department of Mineralogy and Metallurgy. The study of low grade and impure fuels and of means to render them capable of utilization for purposes not now open to them is of the highest importance to a proper conservation of our mineral resources.

POTTERY MACHINE ROOM

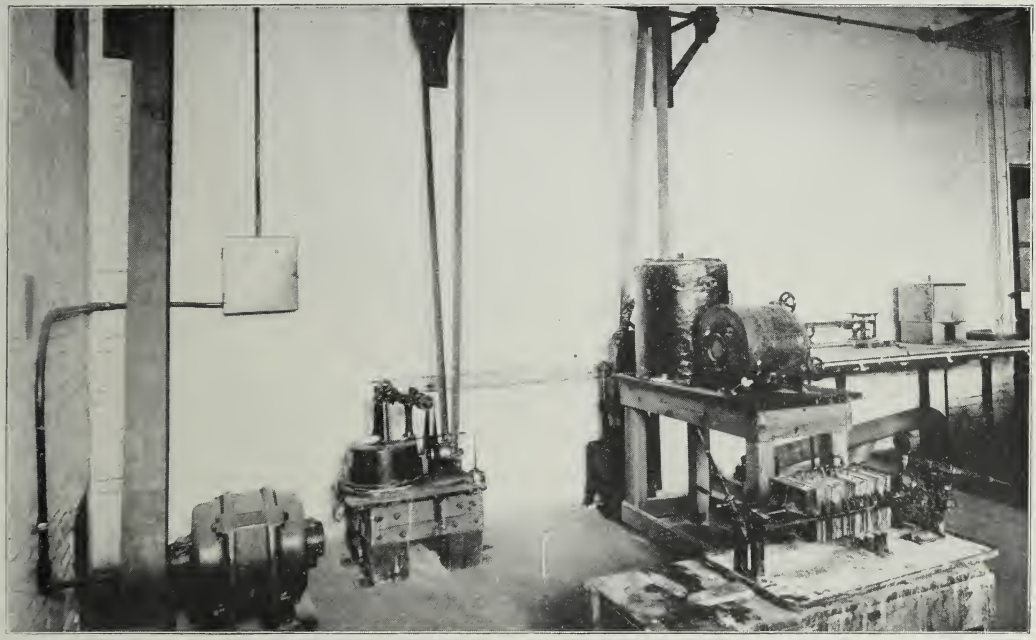
This room is used by the students in Ceramic Engineering for grinding and sifting glazes, filter pressing bodies, jiggering and throwing pottery and similar mechanical work. A similar laboratory for brick and tile manufacture and experimental work along these lines is also available.

KILN ROOM

The students in Ceramic Engineering are required to do all or most of the burning of their own work, whether it be experimental series of clay mixtures, bodies, glazes or colors, or finished pieces of ware in which the foregoing experiments are applied. This work is carried on in the four kilns shown above and in a number of smaller ones not shown in this view.

CHEMISTRY HALL

The greater part of this building is occupied by the Department of Chemistry. There are two large laboratories in the basement and lecture rooms and laboratories on each of the floors above. All are well equipped with the necessary apparatus for pursuing not only elementary but advanced work in all fields of chemical research. The building was erected in 1907 at a cost of $100,000.00.

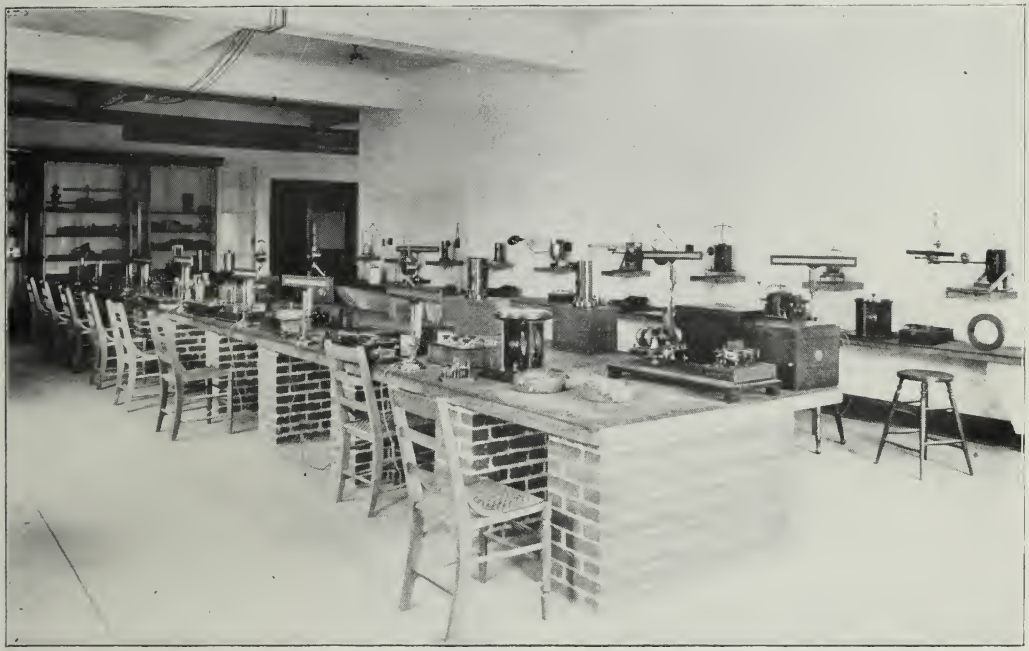


A CORNER OF THE CHEMICAL ENGINEERING LABORATORY

There is a growing demand for trained men in those industries which employ chemical processes in their work, such as the manufacture of acids, alkalies, paints, soaps, fertilizers, etc. To manage these industries so as to meet competition successfully, the services of a chemist are indispensable.

PHYSICS HALL.

This building is exclusively used to house the department of Physics. It constitutes the central part only of the building provided for in the plans. The cost of this structure was $80,000.00. It is well equipped with modern apparatus.

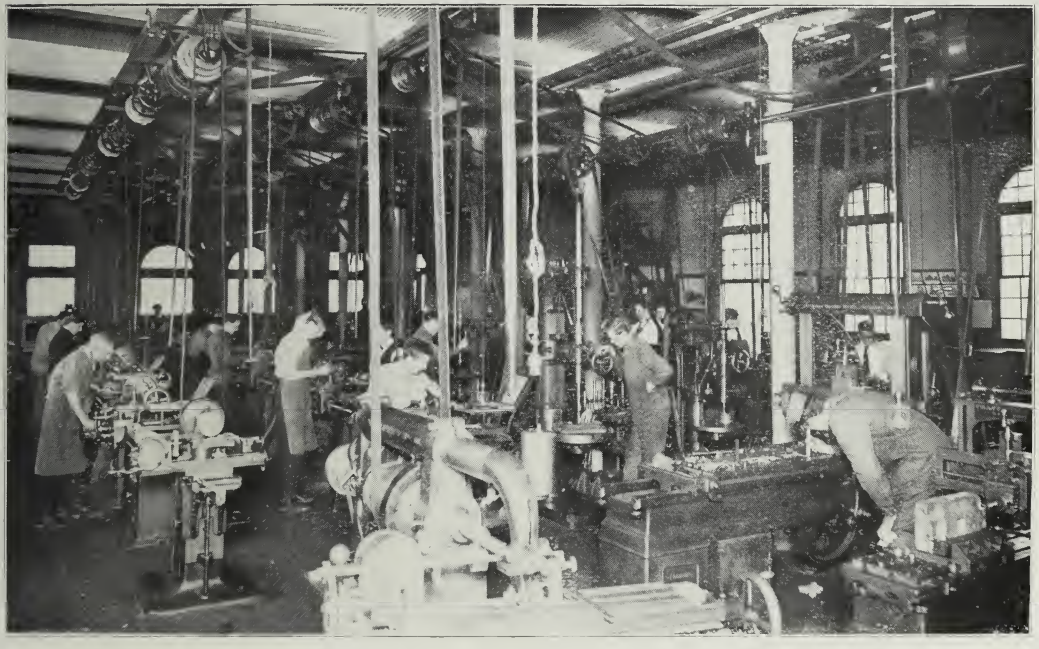


LABORATORY FOR ELECTRICAL MEASUREMENTS

This view illustrates the equipment provided for those who pursue electricity as a major study in their course. It is used principally by the Juniors in the electrical engineering course.

HAYES HALL

This building, constructed in 1892, at a cost of $55,000.00, was designed by President Rutherford B. Hayes who at that time was one of the chief advocates of the development of Manual Training. It houses the shops for forging, foundry, machine work, bench work in metal and wood work, and equipment for various other forms of manual work for men and women.

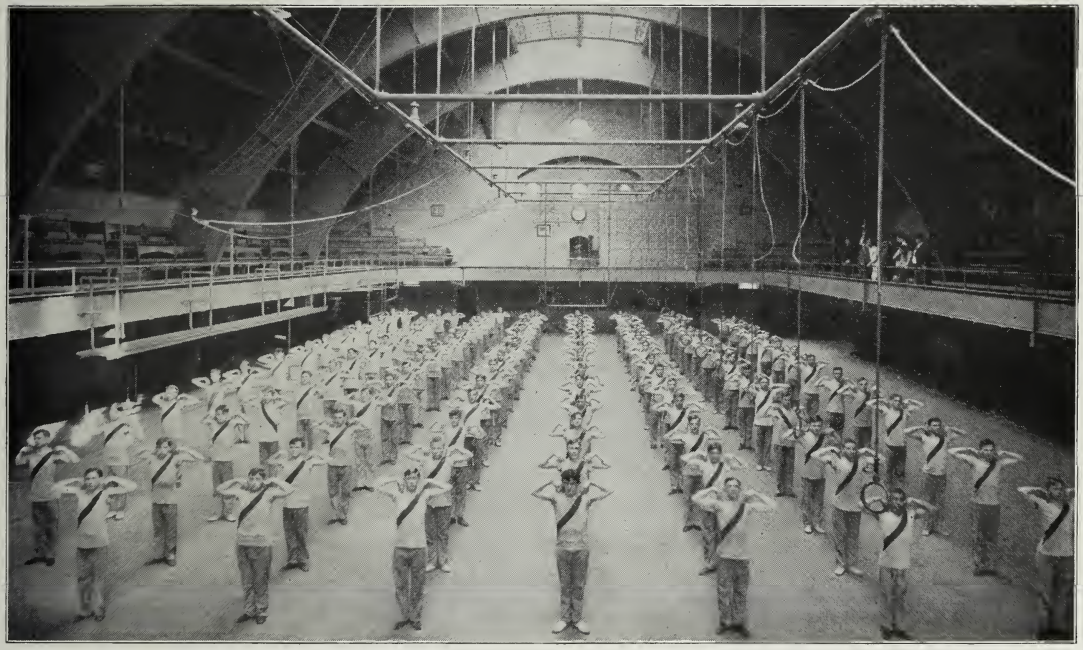


MACHINE SHOP

Besides the benches and tools for vise work, the machine shop is well equipped with lathes of various types, including a monitor turret lathe, planers, shapers, milling and grinding machines, and arbor presses. The equipment of small tools includes a large number of special designs.

GYMNASIUM AND ARMORY

This building, constructed in 1894 at a cost of $115,000.00, and since extensively rearranged inside with marked increase in efficiency, is constantly used to its full capacity. Military Drill occurs three times weekly at 11 A. M. and at 4 P. M. At other hours, the building is given over to the required work in body-building exercises and to indoor athletic sports, under the direction of the Department of Physical Education.

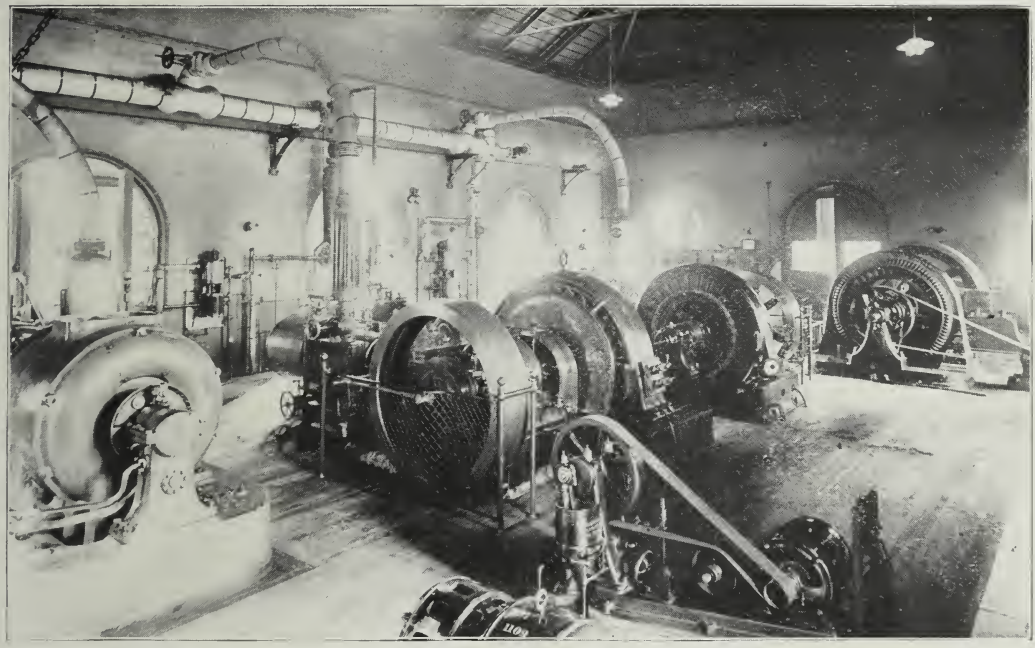


CLASS INSTRUCTION IN BODY-BUILDING

Every first year student must carry a course of two hours per week in the Gymnasium. The work is given under instruction and under strict discipline, though the play element is sufficiently well developed throughout to make the work popular and attractive.

UNIVERSITY POWER HOUSE

This group of buildings and their equipment furnishes an interesting object lesson to every engineering student. The use of locomotive crane and clam-shell grab-bucket unloader with mechanical distribution of coal to the boilers reduces the cost of coal handling to a very low figure. The boiler house is equipped with five high-pressure water-tube boilers of 1550 H. P. capacity, supplied with mechanical stokers. These with the reciprocating and turbine engines and the use of condensers offer a further lesson in the economy of fuel consumption.



INTERIOR OF ENGINE ROOM, POWER HOUSE

This illustration shows the engines used in generating current for light and power at the University. On the left is a 300 K. W. turbine generator set. The next two form a 125 K. W. tandum high speed compound generator set. At the extreme right is a gas engine direct-connected to a 100 K. W. generator. In the foreground is an electric-driven air compressor and a 10 K. W. motor-driven exciter set. All current generated for light and power is1100 volts, two-phase, 60 cycle.

ENGINEERING DRAWING

Drafting is an essential part of every engineer's education, and is therefore required in all courses in this college. Besides the laboratory shown above, the Engineering Drawing department occupies three large drawing rooms in Brown Hall, and two rooms in Hayes Hall. The illustration gives a fair idea of the equipment of each room.

THE OHIO STATE UNIVERSITY

Organization

The Ohio State University, located at Columbus, is a part of the public educational facilities maintained by the State. It comprises seven colleges and a graduate school:

The College of Agriculture,
The College of Arts, Philosophy and Science,
The College of Education,
The College of Engineering,
The College of Law,
The College of Pharmacy,
The College of Veterinary Medicine,
The Graduate School.

Publications

In addition to the General Catalogue, which contains all the courses given in the entire University, separate bulletins are published, describing the courses offered in the several colleges and giving other general information.

This bulletin is a special one intended to show graphically some of the equipment and other facilities employed by the College of Engineering in the regular class-room and laboratory work.

A full description of the courses of study offered in the various departments of the college is given in the regular annual bulletin of the College of Engineering.

Any of these publications may be obtained by addressing W. E. Mann, University Editor, Columbus, Ohio.

Calendar For 1912-1913

Entrance Examinations, June 4 to 8, and September 10 to 14.
First Semester begins September 17.
Second Semester begins February 11.
Commencement Day, June 11.

The Ohio State University Bulletin is issued at least twenty times during the year; monthly in July, August, September and June, and bi-weekly in October, November, December, January, February, March, April, and May.

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